STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201. RALEIGH. N.C. 27611-5201

E. NORRIS TOLSON
SECRETARY

February 9, 1999

Ms. Cindy Rintoul
DWM - UST Section
Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107

SUBJECT: **Underground Storage Tank (UST) Closure and Assessment Report**
Former Polly Edwards Property
Former Helen Carroll Property
Former Jack Sillmon, Heirs Property

Dear Ms. Rintoul:

Please find attached a copy of the "UST Closure and Assessment Report" for the three above referenced properties. This report was prepared by ARCADIS Geraghty & Miller, Inc. (ARCADIS) for the NCDOT Geotechnical Unit/GeoEnvironmental Section. All the USTs were non-regulated heating oil or farm tanks discovered during the early stages of construction along Guilford College Road (SR 1546) in Greensboro, NC. No contaminated soils were encountered during closures activities at the Edwards or Carroll sites. At the Sillmon site, a small amount of contaminated soil was excavated and stockpiled on-site. We are currently in the process of having a soil disposal company properly dispose of this stockpile.

Should you require more information about the sites, please feel to contact me at (919) 250-4088.

Sincerely,

Eugene Tarascio
Project Environmental Geologist
Geotechnical Unit/Geoenvironmental Section

ET
Attachment

Underground Storage Tank Closure Assessment Report

State Project No. 8.U492101
TIP No. (U-2524AA)
Guilford College Road Right-of-Way
Greensboro, Guilford County,
North Carolina

ARCADIS
GERAGHTY & MILLER

January 1999

PREPARED FOR

Geotechnical Unit
North Carolina Department
of Transportation

ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

State Project No. 8.U492101
TIP No. (U-2524AA)
Guilford College Road Right-of-Way
Greensboro, Guilford County,
North Carolina

Prepared for:
Geotechnical Unit
North Carolina Department
of Transportation

Prepared by:
ARCADIS Geraghty & Miller, Inc.
2301 Rexwoods Drive
Suite 200
Raleigh
North Carolina 27607
Tel 919-782-5511
Fax 919-782-5905

Our Ref.:
NC000541.0001

Date:
January 1999

UNDERGROUND STORAGE TANK CLOSURE ASSESSMENT REPORT

STATE PROJECT NO. 8.U492101
TIP NO. (U-2524AA)
GUILFORD COLLEGE ROAD RIGHT-OF-WAY
GREENSBORO, GUILFORD COUNTY
NORTH CAROLINA

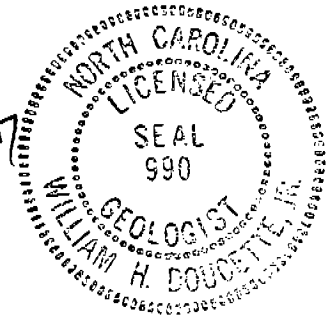
January 1999

Prepared by ARCADIS GERAGHTY & MILLER, INC.

Robert J. Ellis
Scientist/Geologist

James E. Shilliday, III, L.G.
Senior Scientist/Department Manager

William H. Doucette, Jr., Ph.D., L.G.
Associate/Project Advisor



Appendices

1. INTRODUCTION

ARCADIS Geraghty & Miller, Inc. is pleased to submit this Underground Storage Tank (UST) Closure Assessment Report to the North Carolina Department of Transportation (NCDOT), Geothechnical Unit.

1.1 Purpose

This report documents the permanent closures of three non-regulated USTs located within the Guilford College Road right of way, south of Greensboro, Guilford County, North Carolina. Approximate locations of the former USTs are shown on Figure 1-1. The former USTs were located on properties formerly owned by Mrs. Polly Edwards (parcel #23), Mrs. Helen Carroll (parcel #961), and the Mr. Jack Sillmon Heirs (parcel #45). The three USTs were closed by removal on January 5, 1999.

1.2 Site Description

Three abandoned USTs were discovered within the NCDOT right of way by NCDOT personnel during the early stages of road construction on Guilford College Road, Greensboro, Guilford County, North Carolina, State Project Number 8.U492101 (U2524-AA). The locations of the three USTs are shown on Figure 1-2. One former UST containing gasoline was removed from the property formerly owned by Mrs. Polly Edwards (parcel #23). The approximate location of this UST was 160 m west of the current Guilford College Road and 60 m north of Hickory Grove Road. A former home heating oil UST was removed from the property formerly owned by Mrs. Helen Carroll (parcel #961). The approximate location of this UST was 40 m northwest of the current intersection between Guilford College Road and Sapp Road. Another home heating oil UST plus three above ground storage tanks (ASTs) containing heating oil were encountered on the property formerly owned by the Mr. Jack Sillmon Heirs (parcel #45). The approximate location of this UST was 160 m west of the current Guilford College Road and 75 m north of Wendover Avenue.

2. FIELD ACTIVITIES

The procedures followed for the soil excavation, stockpiling, and sampling activities are presented in this section.

2.1 Underground and Aboveground Storage Tank Removals

The three abandoned USTs and the three ASTs were closed by removal on January 5, 1999. Tank removal and soil excavation services were subcontracted through Soil Solutions, Inc. (SSI) of Winston-Salem, North Carolina. A summary of former UST and AST owners, locations, volumes, dimensions, contents, and composition is provided in Table 2-1.

Notice of Intent: UST Permanent Closure or Change in Service Forms (Form UST-3) were not required to be filed for these tanks because they were considered non-regulated by the North Carolina Department of Environment and Natural Resources (NCDENR). All three USTs had capacities of less than 1,100 gallons and the contents (gasoline or home heating oil) were used for non-commercial purposes. All UST closure field activities were conducted in accordance with the NCDENR, Groundwater Section Guidelines For the Investigation and Remediation of Soils and Groundwater - Volume II (NCDENR, 1998a).

Prior to beginning the UST removals, liquid petroleum products and sludge materials contained within the USTs were removed using a vacuum truck and disposed of at HOH Corporation by SSI. Non-Hazardous waste material manifests are presented in Appendix A. Vapors were purged from the USTs using dry ice. Vapor concentrations within the USTs were monitored by SSI by placing a combustible gas indicator (CGI) probe in the fill opening. Readings of 10 percent or less of the lower explosive limit (LEL) were obtained before the tanks were considered safe for removal.

Soil overburden was removed and stockpiled by SSI using a backhoe/excavator at each UST location. ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening soil samples with an organic vapor meter (OVM). OVM readings (above 50 parts per million [ppm]) were used to segregate impacted soil from non-impacted soil. The PID was calibrated on at least a daily basis using a zero gas and a 100 part per million by volume (ppmv) isobutylene calibration gas.

The USTs removed from the former Polly Edwards and the Helen Carroll properties were inspected upon removal and appeared to be in good condition with no visible signs of damage of deterioration. The UST removed from the former Jack Sillmon

Heirs property was inspected upon removal and appeared to have small dents and cracks on the top portion of the tank. This apparently had allowed the tank to fill with infiltrating water over time. The side-walls and bottom of the UST appeared to be in good condition with no visible signs of damage. The three ASTs and the one UST from the Jack Sillmon property and the USTs from the other two properties were transported off-site by SSI and disposed of at Safeway Tank Disposal, Colfax, North Carolina.

Tank manifests were initiated upon removal from the ground and completed upon destruction of the tanks. The certificates of disposal for each of the tanks are provided in Appendix B. Copies of the UST Closure Forms (GW/UST-2) and UST Closure Reports (GW/UST-12) for these USTs are provided in Appendix C.

2.2 Soil Excavation

Minor surface contamination was noted in the soil overburden above the UST at the Jack Sillmon Heirs Property, apparently resulting from infiltrating water entering and overflowing the damaged tank. However, this soil was excavated and stockpiled during the removal of the UST and no further abatement was necessary at that location. Excavated soil (less than 3.8 cubic meters) that was suspected to be impacted was stockpiled on polyethylene sheeting near the excavation pits and within the NCDOT right-of-way. The stockpiled soil was covered with a polyethylene liner and contained on all sides with bails of straw. There was no indication of impacted soil above the USTs at the other two sites. However, the soil overburden at each of these sites (less than 3.8 cubic meters, at each site) was stockpiled following the same procedure described above.

After each of the three USTs were removed, visual observations and screening using the OVM indicated that no impacted soil was present in the bottom of the excavation pits. No excavation, in addition to the soil overburden, was necessary at any of the locations. Groundwater was not encountered during the UST removals.

2.3 UST Closure Sampling

A total of two soil samples were collected from each of the UST excavation pit bottoms on January 5, 1999. Samples from the Mrs. Polly Edwards property (parcel #23) on Hickory Grove Road were labeled HG-1, HG-2. Samples from the Mr. Jack Sillmon Heirs property (parcel #45) located off of Wendover Avenue were WA-1, WA-2. Mrs. Helen Carroll property (parcel #961) located off of Guilford College

Road were labeled GC-1, and GC-2. The excavation pit and soil sample locations for these properties are shown on Figures 2-1, 2-2, and 2-3, respectively.

The six closure soil samples (HG-1, HG-2, WA-1, WA-2, GC-1, and GC-2) were collected from the excavation bottoms. Soil samples were collected from the backhoe bucket using a stainless steel spoon. The samples were then packed on iced in a laboratory-provided sample cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET in Cary, North Carolina to be analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. The results of the soil analyses are discussed in Section 3.1.

2.4 Stockpile Sampling

The total volume of soil excavated and stockpiled was less than 4 cubic meters at each UST location. The NCDENR requires that one representative sample be collected for every 152.9 cubic meters of stockpiled soil. Therefore, one hand-augered soil boring was advanced within each stockpile for a total of three borings. Three discrete sub-samples were collected from three depths at each of the boring locations. In each case sub-samples from these depths were labeled A, B, and C from top to bottom. Stockpile sub-samples from the Jack Sillmon Heirs property were labeled (SP-1A, SP-1B, and SP-1C. Stockpile sub-samples from the Polly Edwards property were labeled SP-2A, SP-2B, and SP-2C. Stockpile sub-samples from the Helen Carroll property were labeled SP-3A, SP-3B, and SP-3C.

Stockpile sub-samples (SP-1 [A,B,C] through SP-8 [A,B,C]) were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples.

The nine stockpile soil sub-samples (SP-1 [A,B,C] through SP-3 [A,B,C]) were composited at C&ET into three composite samples (SP-1, SP-2, and SP-3) and analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. The results of the soil analyses are discussed in Section 3.2.

2.5 Excavation Backfilling

At the request of the NCDOT, the excavation pits were not back-filled after the closure samples were collected. The excavation pits were secured with plastic fencing.

3. ANALYTICAL RESULTS

This section provides a discussion of the analytical results for the six closure soil samples (HG-1, HG-2, WA-1, WA-2, GC-1, and GC-2) collected from the UST pit bottoms and the three composite soil samples (SP-1, SP-2, and SP-3) collected from the soil stockpiles. A summary of the soil sample identification numbers, collection dates, depths, and analytical results is presented in Table 3-1.

3.1 UST Closure Sample Analytical Results

Results for the six closure soil samples (HG-1, HG-2, WA-1, WA-2, GC-1, and GC-2) collected from the UST pit bottoms and analyzed by U.S. EPA Method 3550 and 5030, are summarized in Table 3-1. Analytical laboratory results for the closure samples from all three sites indicate that low and high fraction petroleum hydrocarbons were not detected at concentrations above reportable limits of 0.10 milligrams per kilogram (mg/kg) and 10 mg/kg, respectively. The laboratory analytical reports and chain of custody record for the closure samples are presented in Appendix D.

3.2 Stockpile Sample Analytical Results

The nine stockpile sub-samples submitted to C&ET (SP-1 [A,B,C], SP-2 [A,B,C], and SP-3 [A,B,C]) were composited under laboratory controlled climate conditions into three composite samples (SP-1, SP-2, and SP-3) for analyses of low and high fraction hydrocarbons by U.S. EPA Methods 5030 and 3550, respectively. Analytical results for the three composite samples (SP-1, SP-2, and SP-3) are summarized in Table 3-1. Analytical laboratory results for composite stockpile soil samples SP-2 and SP-3 (Polly Edwards and Helen Carroll properties, respectively) indicate that low and high fraction petroleum hydrocarbons were not detected at concentrations above reportable limits of 0.10 mg/kg and 10 mg/kg, respectively. Analytical results for composite stockpile sample SP-1, (Jack Sillmon Heirs property) indicate that low fraction hydrocarbons were not detected at concentrations exceeding the reportable limit of 0.10 mg/kg. However, high fraction hydrocarbons were detected in stockpile sample SP-1 at a concentration of 68.5 mg/kg, which exceeds the reportable limit of 10 mg/kg.

4. CONCLUSIONS

The following summary presents the key findings and conclusions with respect to the UST Closure activities at the properties formerly owned by Mrs. Polly Edwards (parcel #23). Mrs. Helen Carroll (parcel #961) and the Mr. Jack Sillmon Heirs (parcel #45), Greensboro, North Carolina.

- One 3785 liter (L) UST was removed from the property formerly owned by Mrs. Polly Edwards (parcel #23) on January 5, 1999. The UST formerly contained gasoline. The tank appeared to be in good condition with no visible signs of damage of deterioration. The tank was transported off-site to Safeway Tank Disposal in Colfax, North Carolina.

- One 2082 L UST was removed from the property formerly owned by Mrs. Helen Carroll (parcel #961) on January 5, 1999. The UST formerly contained #2 fuel oil. The fuel oil had been used as a heating source for the home at the property. The tank appeared to be in good condition with no visible signs of damage or deterioration. The tank was transported off-site to Safeway Tank Disposal in Colfax, North Carolina.

- One 2082 L UST was removed from the property formerly owned Mr. Jack Sillmon Heirs (parcel #45), on January 5, 1999. The UST formerly contained #2 fuel oil. The fuel oil had been used as a heating source for the home at the property. The tank appeared to be in good condition with no visible signs of damage of deterioration. In addition, three ASTs were encountered at this location. All four tanks were transported off-site to Safeway Tank Disposal in Colfax, North Carolina.

- Two closure samples were collected from UST excavation pit bottoms at the former Mrs. Polly Edwards, Mrs. Helen Carroll, and Mr. Jack Sillmon Heirs properties after the tanks were removed (HG-1, HG-2, GC-1, GC-2, WA-1, and WA-2, respectively). Analytical laboratory results for the closure samples from all three sites indicate that low and high fraction petroleum hydrocarbons were not detected at concentrations above reportable limits of 0.10 mg/kg and 10 mg/kg, respectively. These results indicate that clean closures were achieved for each of the three USTs. Therefore, no further action should be required at these locations.

- Upon completion of the soil sampling activities the excavation pits at all three locations were secured with barricade fencing and left open. The pits will be backfilled during road construction which is scheduled to begin in January 1999.

- One composite soil sample was collected from each the soil stockpiles at the Mr. Jack Sillmon Heirs property, Mrs. Polly Edwards property, and Mrs. Helen Carroll property, (SP-1, SP-2 and SP-3, respectively). Analytical results indicate that high fraction hydrocarbons were detected in stockpile sample SP-1 at a concentration of 68.5 mg/kg, which exceeds the reportable limit of 10 mg/kg. Low fraction hydrocarbons were not detected in sample SP-1 at concentrations above reportable limit of 0.10 mg/kg. Analytical results for the stockpile samples SP-2 and SP-3 indicate that that low and high fraction petroleum hydrocarbons were not detected at concentrations above reportable limits of 0.10 mg/kg and 10 mg/kg, respectively.

- The excavated and stockpiled soil at the former Jack Sillmon Heirs property is scheduled to be transported off-site by Soil Solutions, Inc. and will be treated at their facility.

5. REFERENCES

North Carolina Department of Environment and Natural Resources (NCDENR), 1998a. Groundwater Section Guidelines For the Investigation and Remediation of Soils and Groundwater - Volume II, January 2.

North Carolina Department of Environment and Natural Resources (NCDENR), 1998b. Letter from Burrie Boshoff, Underground Storage Tank Section, to Environmental Service Companies and Consultants, August 24.

ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

TABLES

Table 2-1. Summary of Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs) removed on January 5, 1999, Guilford College Road Right of Way, State Project No. 8.U492101(U-2524AA), Greensboro, North Carolina.

Former Tank Owner / Location	Type	Disposal Number	Volume (Liters)	Dimensions (Meters)	Contents	Composition
Mrs. Helen Carroll (parcel #961)	UST	1882	2082	1.14 x 1.93	No. 2 Fuel Oil	Steel
Mrs. Polly Edwards (parcel #23)	UST	1884	3785	1.22 x 3.05	Gasoline	Steel
Mr. Jack Sillmon Heirs (parcel #45)	UST	1885	2082	1.14 x 1.93	No. 2 Fuel Oil	Steel
Mr. Jack Sillmon Heirs (parcel #45)	AST	1883	946	0.9 x 1.2	No. 2 Fuel Oil	Steel
Mr. Jack Sillmon Heirs (parcel #45)	AST	1886	1022	1.14 x 1.93	No. 2 Fuel Oil	Steel
Mr. Jack Sillmon Heirs (parcel #45)	AST	1887	2082	0.9 x 1.2	No. 2 Fuel Oil	Steel

Table 3-1. Summary of Soil Analytical Results for UST Closure Samples and Stockpile Samples Collected on January 5, 1999, UST Removals, Guilford College Road, [U-22524AA], Greensboro, North Carolina.

			Closure Samples						Stockpile Samples		
Constituents	Reportable Concentrations	Sample ID: Depth (m bls): Date Sampled:	HG-1 1.83 1/5/99	HG-2 1.83 1/5/99	WA-1 1.52 1/5/99	WA-2 1.52 1/5/99	GC-1 1.52 1/5/99	GC-2 1.52 1/5/99	SP-1 1/5/99	SP-2 1/5/99	SP-3 1/5/99
High Fraction Hydrocarbon (USEPA Method 3550) mg/kg dw	10		<10	<10	<10	<10	<10	<10	68.5	<10	<10
Low Fraction Hydrocarbon (USEPA Method 5030) mg/kg dw	10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
% Solids (USEPA Method 2540G) %	NS		82.5	83.1	83.3	83.1	72.1	72.6	77.8	77.6	71.4

Reportable Concentrations	Maximum Soil Contaminant Concentration (NCDENR, 1998b).
<	Constituent was not detected above the reporting limit.
[ ]	Indicates that the total petroleum hydrocarbon has been exceeded (NCDENR, 1998b).
mg/kg dw	Milligrams per kilogram on a dry weight basis.
m bls	Meters below the land surface.
NS	Constituent has no standard.
NA	Constituent not analyzed.
mg/kg dw	Milligrams per kilogram on a dry weight basis.

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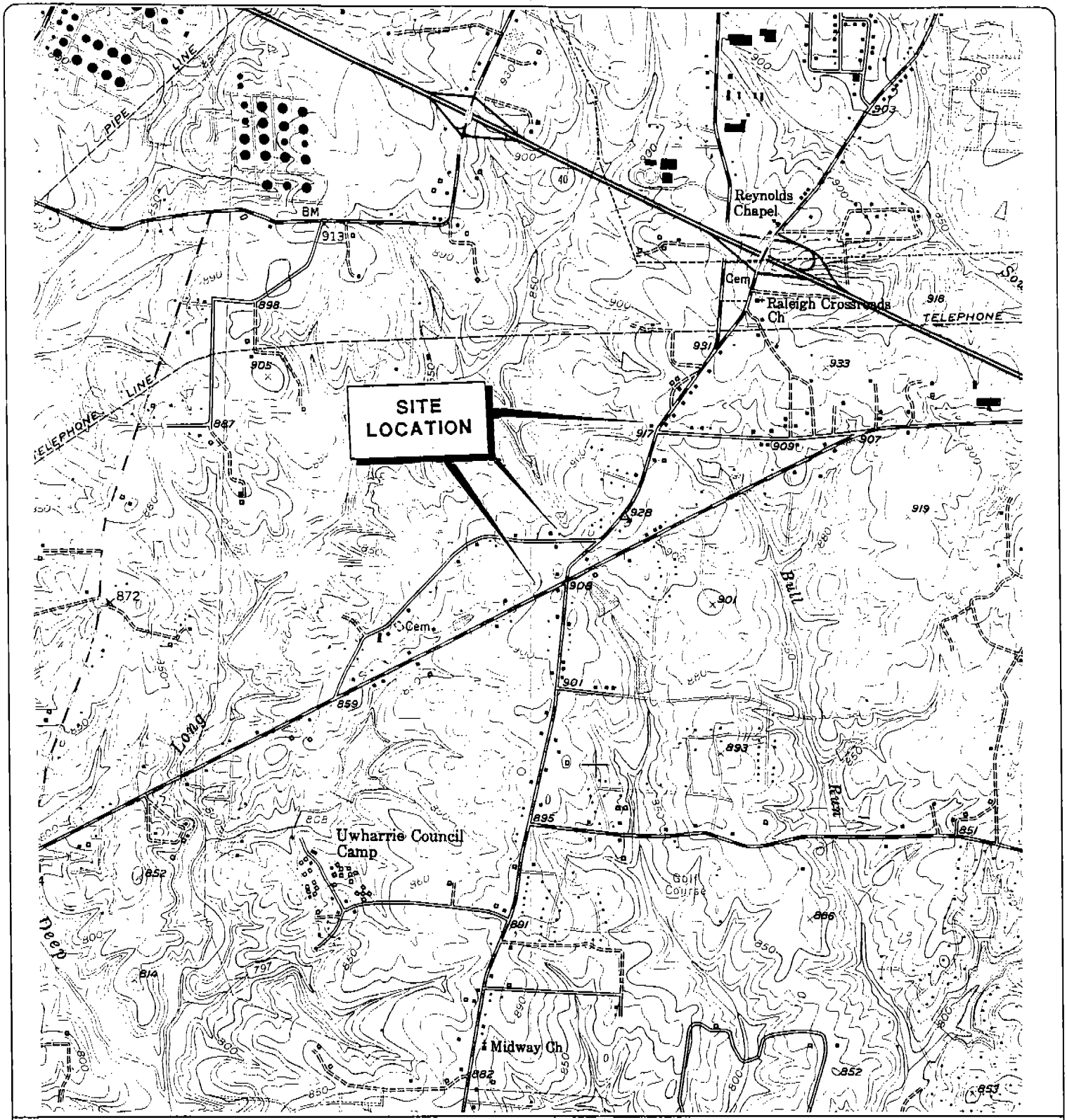
Underground Storage Tank Closure Assessment Report

FIGURES



1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE 1:24000

County Location

Contour Interval 10-Feet Datum is Mean Sea Level
U.S.G.S. 7.5 Minute Series Guilford, N.C. Topographic Quadrangle.

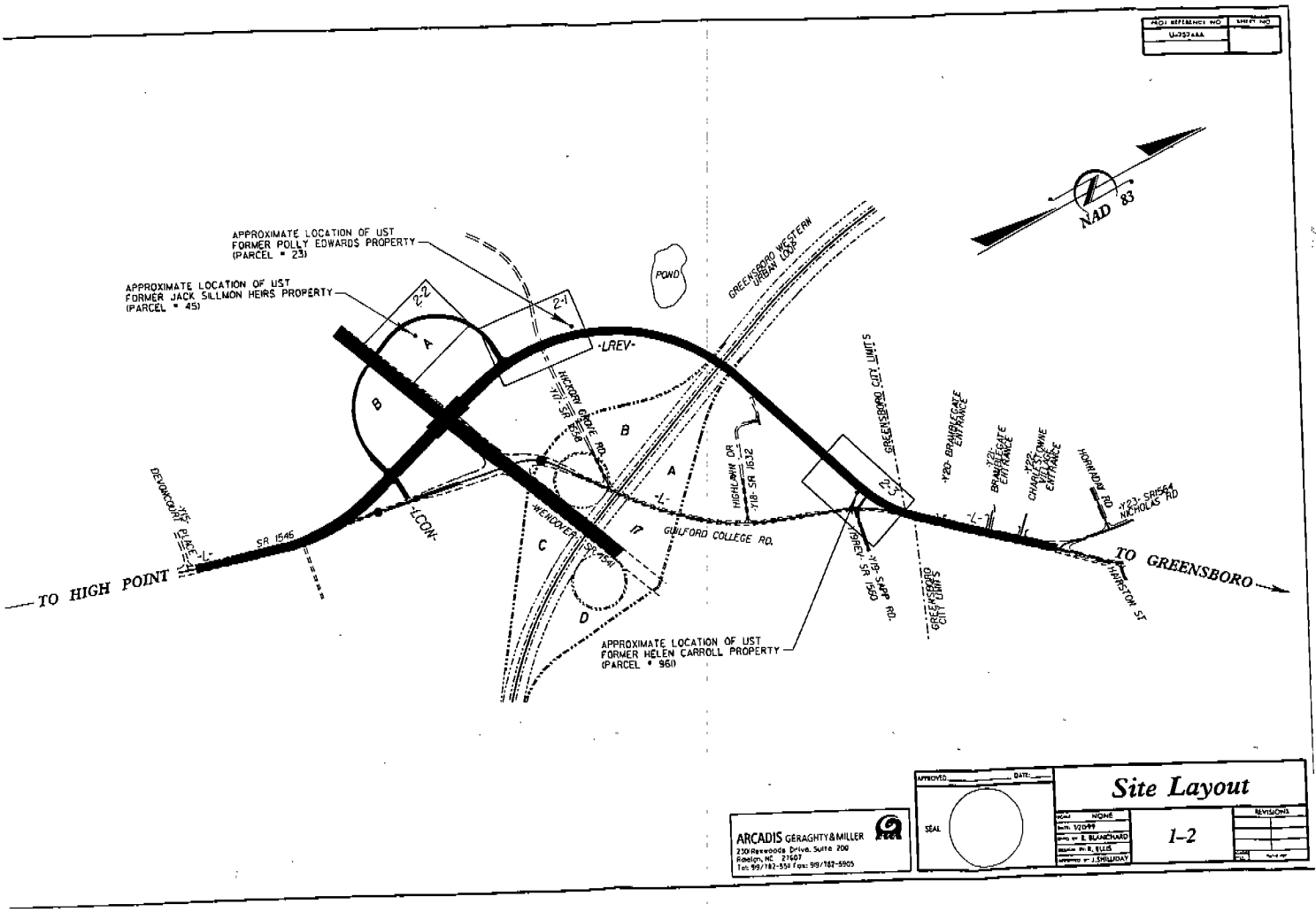
ARCADIS GERAGHTY & MILLER
2301 Rexwood Drive
Suite 200 RALEIGH, NC 27622
Tel: 919/782-5511 Fax: 919/782-5905

PRJT MANAGER: J.SHILLIDAY	CHECKED BY: R. ELLIS
DRAWING: FIG1-1.DGN	
PRJT NO: NC000541.0001	
DWG DATE: 1/20/99	DRAFTER: R. BLANCHARD

SITE LOCATION

UST REMOVALS
GUILFORD COLLEGE ROAD
STATE PROJECT NO. 8.4492106 [U-2524AA]
GREENSBORO, NORTH CAROLINA

1-1



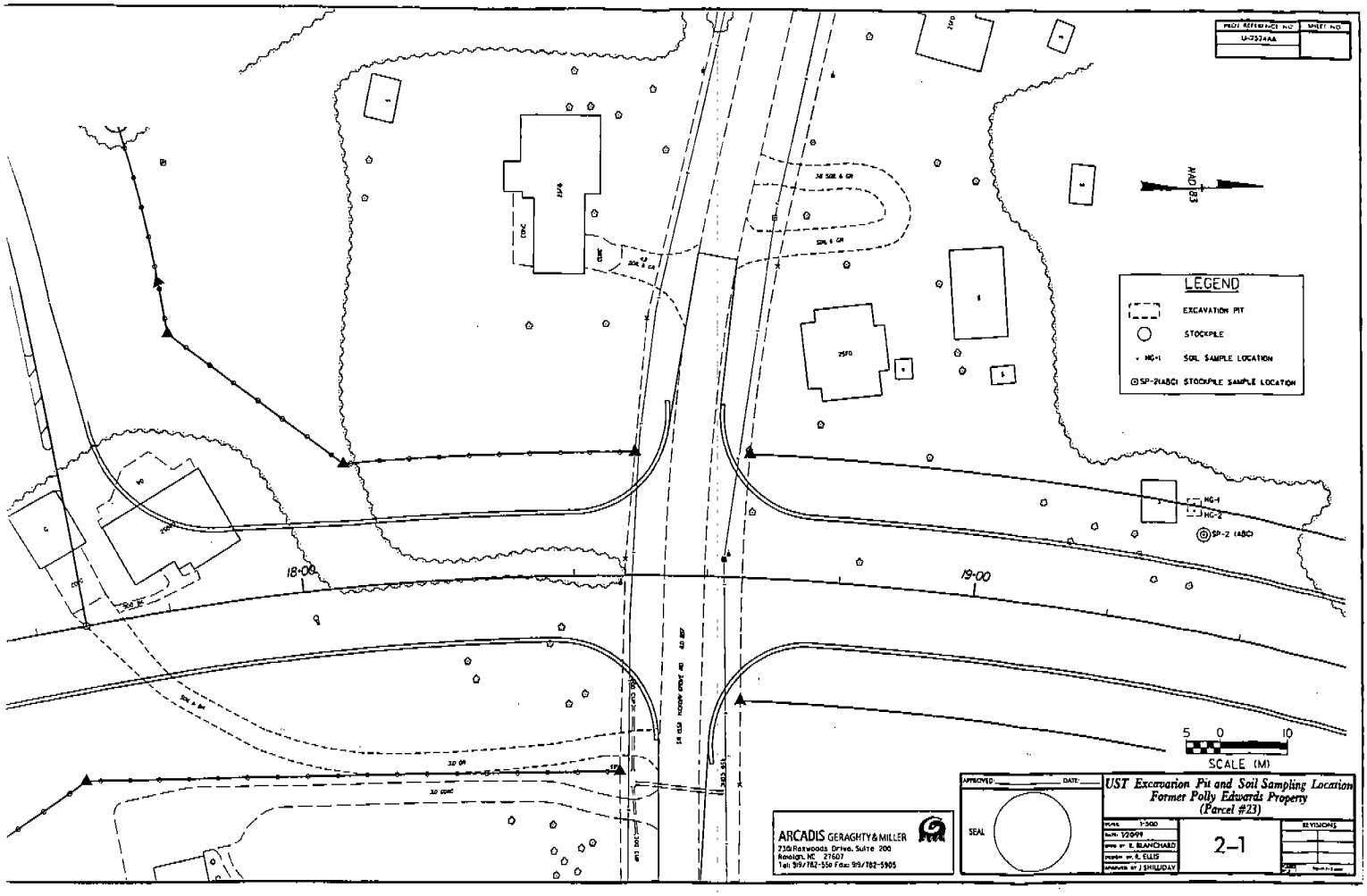
ARCADIS GERAGHTY & MILLER
2301 Renaissance Drive, Suite 200
Raleigh, NC 27607
Tel: 919/782-5511 Fax: 919/782-5905

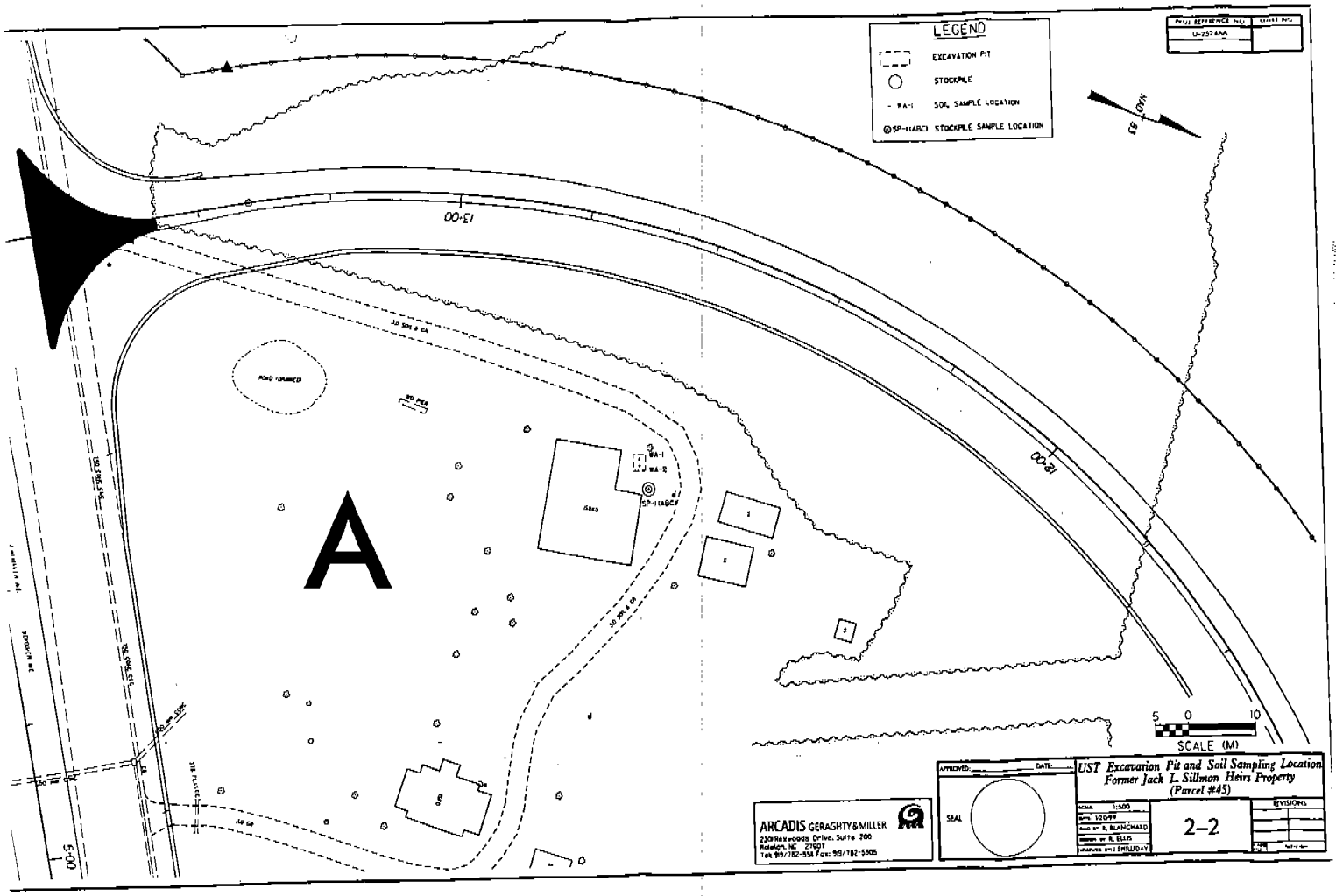
APPROVED: DATE:
SEAL

Site Layout

1-2

REVISIONS


LEGEND
EXCAVATION PIT
STOCKPILE
MG-1 SOIL SAMPLE LOCATION
SP-2(ABC) STOCKPILE SAMPLE LOCATION
MG-1
MG-2
SP-2 (ABC)
18+00
19+00
NAD 83
5 0 10
SCALE (M)
ARCADIS GERAGHTY & MILLER
2130 Regency Drive, Suite 200
Raleigh, NC 27607
Tel: 919/782-550 Fax: 919/782-5905
APPROVED
DATE:
SEAL
UST Excavation Pit and Soil Sampling Location
Former Polly Edwards Property
(Parcel #23)
2-1
REVISIONS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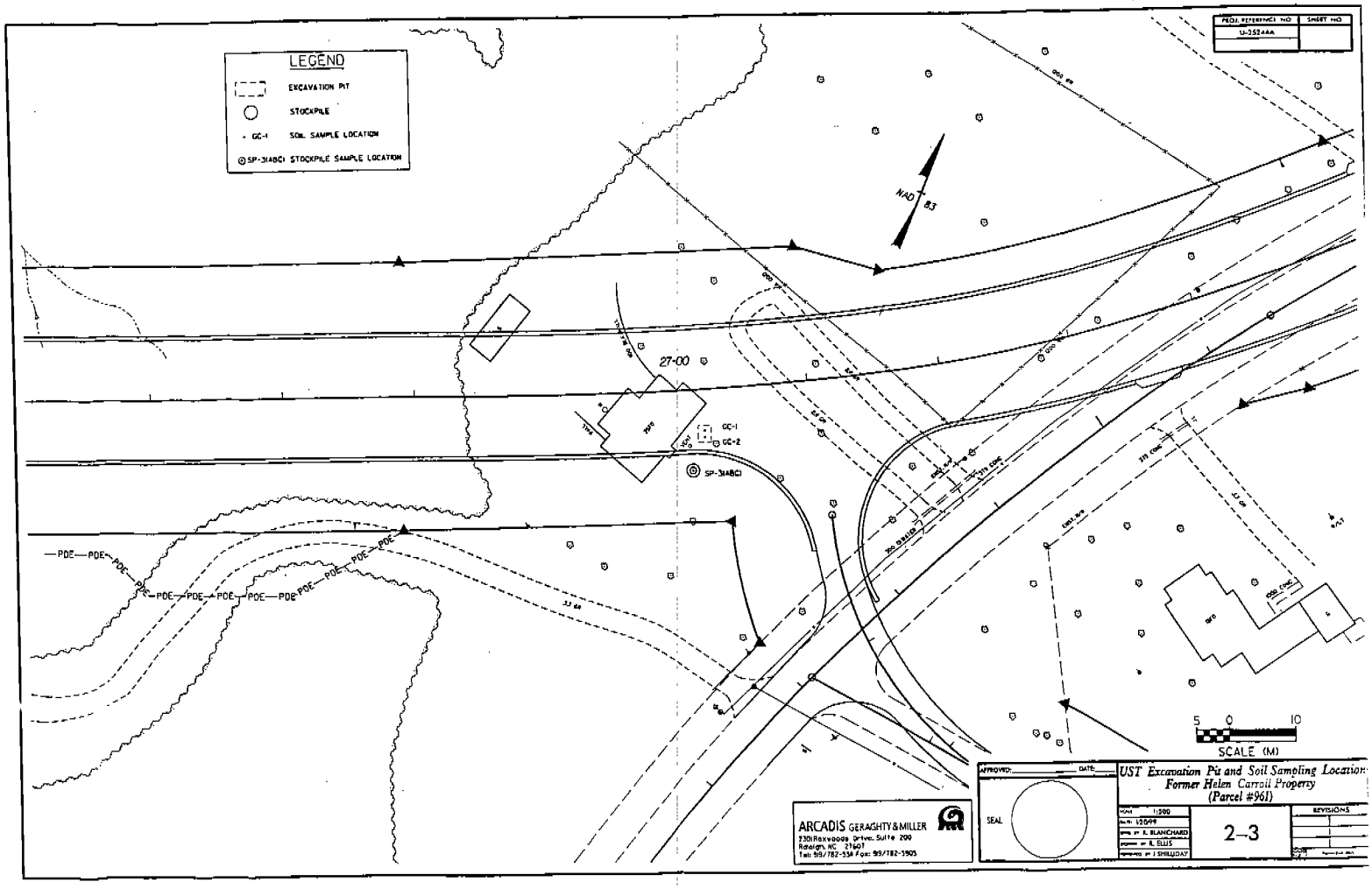
EXCAVATION PIT
STOCKPILE
SOIL SAMPLE LOCATION
STOCKPILE SAMPLE LOCATION
A
SCALE (M)
UST Excavation Pit and Soil Sampling Location
Former Jack L. Sillmon Heirs Property
(Parcel #45)
2-2
ARCADIS GERAGHTY & MILLER


LEGEND
EXCAVATION PIT
STOCKPILE
GC-1 SOIL SAMPLE LOCATION
SP-3(ABC) STOCKPILE SAMPLE LOCATION
PROJ. REFERENCE NO.
U-2524AA
SHEET NO.
NAD 83
27-00
GC-1
GC-2
SP-3(ABC)
PDE
5 0 10
SCALE (M)
APPROVED:
DATE:
SEAL
UST Excavation Pit and Soil Sampling Location
Former Helen Carroll Property
(Parcel #961)
SCALE 1:300
DRN. BY: B. BLANCHARD
CHKD. BY: A. ELLIS
APPROVED BY: J. SHRUDAY
REVISIONS
2-3
ARCADIS GERAGHTY & MILLER
2301 Rexwoods Drive, Suite 200
Raleigh, NC 27607
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ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

APPENDIX A

NON-HAZARDOUS WASTE MATERIAL MANIFESTS

NON-HAZARDOUS WASTE MANIFEST

HOH CORP Environmental Management
1701 Vargrave St., Winston-Salem, NC 27107 • 336-727-4644 • Fax 336-727-8840

Manifest: 4959 Date: 1/5/99

Generator: PILOT Phone No: 919-250-4088

[illegible] DOVER AVE EPA ID No:

[illegible] BORO, NC Contact: GENE TRASCIO

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked and labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 1/5/99 Signature [signature]

Description of Waste	Circle Form	Quantity	Circle Units	Container No.	Container Type
	Solid		Cu. Yards/Drums/Tons		
	Wastewater	300	(Gallons)/Drums		
	Liquid for Solidification		Gallons/Drums/Tons		
	Sludge	293	Cu. Yards/Drums/Tons		

Transporter: [illegible] Unit Numbers:

Phone No: (336) 99[illegible]-1600

EPA ID No:

Vehicle License Tag Number(s) LB-7935 Container: Vac Truck

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

[signature] 1-5-99 James Lee Farmer 1-5-99

Pick-up Driver's Signature *Date* *Delivering Driver's Signature* *Date*

Facility: HOH Corp
1701 Vargrave St.
Winston-Salem, NC 27107

Phone No: 336-727-4644
Permit No: 34-11TP
Contact:

Handling Method:

I certify that the Transporter above delivered the specified material to this facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date _____ Signature [signature]

ORIGINAL - Destination Retain WHITE | COPY 2 - Return to Generator YELLOW | COPY 3 - Transporter Retain PINK | COPY 4 - Generator Retain GOLDENROD

SOIL SOLUTIONS

CERTIFICATE OF DISPOSAL

Soil Solutions, Inc. does hereby certify that 593 gallons of non-hazardous contaminated water was transported for disposal on 1/05/99 from:

Generator: NCDOT

Originating at: Wendover Avenue Greensboro, NC

SSI Waste ID#: SF019903

This non-hazardous material has been disposed of by Soil Solutions, Inc. in a manner approved by the North Carolina Department of Environment and Natural Resources.

Thomas W. Hammett

Signature

Thomas W. Hammett
Sr. Vice President
Soil Solutions, Inc.

1703 Vargrave Street Winston-Salem, NC 27107
(336) 725-5844 FAX (336) 725-6244

ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

APPENDIX B

CERTIFICATES OF DISPOSAL FOR USTs AND ASTs

Safeway Tank Disposal, Inc. Page of

RECEIVING REPORT

From: Soil Solutions

Received by: Rich
SAFEWAY TANK DISPOSAL, INC.

Transported by: Chuck

Tank Disposal Number	Size	Weight	Product	Date Received	Origin
1882	550	450	Fuel	1/15/99	~~Center of Hazardous Guilford College~~ Greensboro, N.C.
1883	250	250	Fuel		
1884	1,000	920	Oil		
1885	550	450	Fuel		
1886	920	250	Fuel		
1887	550	450	Fuel	↓	↓

Safeway Tank Disposal, Inc. accepts no liability for the tank(s) and contents on this report. The tank(s) and contents must be a petroleum product. If at any time the tanks are found to contain any product other than a petroleum product, SAFEWAY TANK DISPOSAL, INC. has the right to refuse disposal or negotiate a price for disposal. Customer will be liable for any clean-up or other cost resulting from contamination by a substance other than a petroleum product.

Safeway Tank Disposal, Inc. agrees to dispose of petroleum tanks and contents in accordance with local, state, and federal regulations. Certificate of Disposal to follow.

Chuck Blevins
SAFEWAY TANK DISPOSAL, INC.

ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

APPENDIX C

UST CLOSURE FORMS (UST-2) AND UST CLOSURE REPORTS (GW/UST-12)

GW/UST-2 Site Investigation Report For Permanent Closure or Change-in-Service of U.S.T.

FOR TANKS IN **NC**

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I.D. Number _____
Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: Mrs. Polly Edwards
Corporation, Individual, Public Agency, or Other Entity)
Street Address: 5916 Hickory Grove Road
County: Guilford
City: Greensboro State: NC Zip Code: 27410
Telephone Number: ( ) N/A
(Area Code)

II. Location of Tank(s)

Facility Name: Polly Edwards Property
(or Company)
Facility ID # (if available):
Street Address 5916 Hickory Grove Road
(or State Road)
County: Guilford City: Greensboro Zip Code: 27410
Telephone Number: ( ) N/A
(Area Code)

III. Contact Person

Name: Gene Tarascio (NCDOT) Job Title: Project Environmental Engineer Tel. No. (919) 250-4088
Closure Contractor: Soil Solutions, Inc. Address: 1703 Vanguard St, Greensboro NC Tel. No. (336) 725-5844
Primary Consultant: ARCADIS Geraghty & Miller Address: 2301 Rexwoods Dr. Suite 200, Raleigh, NC Tel. No.: (919) 782-5511
Lab: Chemical & Environmental Technologies Address: 102-A Woodwinds Industrial Ct. Cary, NC Tel. No.: (919) 735-7353

IV. U.S.T. Information

Tank No.	Size in Gallons	Tank Dimensions	Last Contents
1	1000	4ft x 10 ft	Gasoline

V. Excavation Condition

Water In Excavation		Free Product		Notable Odor or Visible Soil Contamination	
Yes	No	Yes	No	Yes	No
	X		X		X

VI. Additional Information Required

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan.1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- ☐ Contact local fire marshal.
- ☐ Notify DEM Regional Office before abandonment.
- ☐ Drain & flush piping into tank.
- ☒ Remove all product and residuals from tank.
- ☒ Excavate down to tank.
- ☒ Clean and inspect tank.
- ☐ Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- ☐ Cap or plug all lines except the vent and fill lines.
- ☒ Purge tank of all product & flammable vapors.
- ☐ Cut one or more large holes in the tanks.
- ☐ Backfill the area.

Date Tank(s) Permanently closed: _____
Date of Change-in-Service: _____

ABANDONMENT IN PLACE

- ☐ Fill tank until material overflows tank opening.
- ☐ Plug or cap all openings.
- ☐ Disconnect and cap or remove vent line.
- ☐ Solid inert material used - specify: _____

REMOVAL

- ☐ Create vent hole.
- ☒ Label tank.
- ☒ Dispose of tank in approved manner.

Final tank destination: Safeway Tank Disposal, Inc
9501 Hwy 421, Colfax, NC

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of owner or owner's authorized representative	Signature	Date Signed
Eugene Tarascio, Project Environmental Engineer	Eugene Tarascio	2/1/99

GW/UST-12 UNDERGROUND STORAGE TANK CLOSURE REPORT

Underground Storage Tank Closure Assessment Report for 5916 Hickory Grove Road, Greensboro, North Carolina, 27410

I. General Information

A. Ownership of UST(s)

1. ***Name of UST Owner:***
   Formerly, Mrs. Polly Edwards

2. ***Owner Address and Telephone Number:***
   5916 Hickory Grove Road, Greensboro, North Carolina, 27410

B. Operator of UST(s)

1. ***Name of UST operator:***
   N/A

2. ***Operator address and telephone number:***
   N/A

C. Facility Information

1. ***Facility name:*** 5916 Hickory Grove Road, Greensboro, North Carolina, 27410
2. ***Facility ID #:*** N/A
3. ***Facility address, telephone number, and county:***
   5916 Hickory Grove Road, Greensboro, North Carolina, 27410

D. Contacts

1. ***Name, address, telephone number, and job title of primary contact person:***
   Eugene Tarascio, Project Environmental Geologist
   North Carolina Department of Transportation
   P.O. Box 25201, Raleigh, NC 27611-5201
   (919) 250-4088

2. ***Name, address, and telephone number of closure contractor:***
   Soil Solutions, Inc.
   1703 Vargrave Street,
   Winston Salem, NC 27107
   (336) 725-5844

3. ***Name, address, and telephone number of primary consultant:***
ARCADIS Geraghty & Miller, Inc.
2301 Rexwoods Drive, Suite 200
Raleigh, North Carolina 27607
(919) 782-5511

4. ***Name, address, telephone number, and State certification number of laboratory:***

Chemical and Environmental Technologies, Inc.
102-A woodwinds Industrial Court
Cary, NC 27511 (919) 735-7353
State Certification Number: DWQ - 96; Public Water Supply - 37724

5. ***Name, address, and telephone number of Soil Disposal Contractor:***
Soil Solutions, Inc.
1703 Vargrave Street,
Winston-Salem, NC 27107
(336) 725-5844

E. UST Information

Tank No.	Installation dates	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	Unknown	1000	4 ft. x 10 ft.	Gasoline	Unknown

F. Site Characteristics

1. ***Describe any past releases at this site.***

It is unknown if any previous releases have occurred at the subject site.

2. ***Is the facility active or inactive at this time? If the facility is inactive, note the last time the USTs were in operation.***

The tanks were inactive at the time of removal. The last time the UST was operational is unknown.

3. ***Describe surrounding property use (for example, residential, commercial, farming, etc.).***

Residential/Farmland

4. ***Describe site geology/ hydrogeology.***

   Soil underlying this site consists predominantly of variably silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand. Bedrock was not encountered during excavation activities, but is reportedly comprised of metamorphosed granitic rock.

5. ***Describe results of receptor survey (water wells, basements, etc., within 1500 feet of the facility).***
   N/A

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained, and the steps taken to clean and purge the tanks.

The tank is non-regulated so permits were not required to be obtained. On January 5, 1999, a vacuum truck and dry ice were used to purge the tank of liquid product and vapors. Then, Soil Solutions, Inc. of Winston-Salem, North Carolina, inspected the UST to determine if the tank was safe for excavation and removal. Vapor concentrations within the UST were monitored by SSI by placing a Combustible Gas Indicator (CGI) probe in the fill opening. Readings of 10 percent or less of the Lower Explosive Limit (LEL) were obtained before the tank was considered to be safe for removal. The Certificate of Disposal for the tank is provided in Appendix C.

B. Note the amount of residual material pumped from the tank(s).

Less than 50 gallons.

C. Describe the storage, sampling, and disposal of the residual material.

Fuel and fuel/water mixtures were transported off-site and disposed of by Soil Solutions at HOH Corporation, 1701 Vargrave Street, Winston Salem, North Carolina. Copies of the non-hazardous waste manifests are presented in the Appendix D.

D. Excavation

1. ***Describe excavation procedures noting the condition of the soil encountered and the dimensions of the excavation in relation to the tanks, piping, and/or pumps.***

   On January 5, 1999, Soil Solutions began excavating soils from above and around the UST. ARCADIS Geraghty & Miller personnel field screened the soil for volatile compounds using a MiniRAE organic vapor meter, which operates by photoionization detection (PID). Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's headspace

to equilibrate with the volatile organic compounds (VOCs) in the soil. The PID probe was then inserted into the bag's headspace and the resultant PID reading was recorded.

The dimensions of the excavation pit necessary to remove the UST was approximately 6 feet in width by 19 feet in length.

2. ***Note the depth of tank burial(s) (from land surface to top of tank).***
The top of the UST was located 3 feet below land surface. The bottom of the tank was located at approximately 6 feet below lands surface. The tanks were resting on and surrounded by soil.

3. ***Note volume of soil excavated.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil (approximately 15 cubic meters) was covered with a polyethylene liner and contained on all sides with bails of straw. One hand-augered soil boring was advanced within the stockpile.

4. ***Describe soil type(s) encountered.***
The soil encountered at the site was generally silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand.

5. ***Describe type and source of backfill used.***
At the request of the NCDOT the excavation pit was secured with barricade fencing and not backfilled.

6. ***Describe condition of UST system(s) (i.e., pitting, holes, etc.).***
The physical condition of the tank was good. No pitting or holes were observed.

7. ***Note if the excavation reached the groundwater table or bedrock surface.***

Neither groundwater nor bedrock were encountered in the excavation pit.

E. Contaminated Soil

1. ***Describe how it was determined to what extent to excavate the soil.***

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening soil samples with an OVM. Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's headspace to equilibrate with the VOCs in the soil. The OVM probe was then inserted into the bag's headspace and the resultant OVM reading was recorded. Visual observations and screening by OVM indicated that no impacted soil was present in the bottom or side walls of the tank pits, after the tank was removed.

2. ***Describe method of temporary storage, sampling, and treatment/disposal of soil.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil

(approximately 15 cubic meters) was covered with a polyethylene liner and contained on all sides with bails of straw. One hand-augered soil boring was advanced within the stockpile. Three discrete sub-samples (SP-2A, SP-2B, SP-2C) were collected from three depths at each of the boring locations. Stockpile sub-samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E.

The stockpile soil sub-samples were composited at C&ET into three composite samples and analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. Analytical results indicated that high and low fraction hydrocarbons were not detected in concentrations that exceed reportable limits of 10 mg/kg and 0.10 mg/kg, respectively. A copy of the laboratory analytical results is provided in Appendix F. The excavated soil remains at the site and will likely be used backfill the excavation pit when road construction begins.

III. Site Investigation

A. Provide information on field screening and physical observations, as well as methods used to calibrate field screening instrument(s).

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening periodic soil samples with an OVM. OVM screening procedures were discussed in previous sections. The OVM was calibrated on at least a daily basis using a zero gas and a 100 part per million by volume (ppmv) isobutylene calibration gas.

B. Describe soil sampling points and sampling procedures used.

1. Samples Associated with Underground Storage Tanks.

A total of two grab samples were collected for laboratory analysis from the UST pit bottom directly below the UST after it was removed. Samples, labeled HG-1 and HG-2, were collected from approximately 6 to 6.5 feet below land surface. samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E.

Soil samples were analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. Analytical results indicated that high and low fraction hydrocarbons were not detected in concentrations that exceed reportable limits of 10 mg/kg and 0.10 mg/kg, respectively. A copy of the laboratory analytical results is provided in Appendix F.

2. Samples Associated with Pipeline and Transfer Lines.

No samples were taken because no pipelines or transfer lines were present.

C. Describe groundwater or surface water sampling procedures

Groundwater or surface water samples were not collected during this investigation

D. Describe quality control measures

Stainless steel spoons were used to collect the soil samples directly from the backhoe bucket. Fresh latex gloves were worn while the soil was transferred from the sampling devices to the laboratory-supplied containers. Sampling equipment was decontaminated between each location with a clean water rinse, soapy water wash, followed by a clean water rinse.

The sample containers were labeled, placed in ice-filled coolers, and then remained in the custody of an ARCADIS Geraghty & Miller representative until delivery to C&ET in Cary, North Carolina.

Quality control samples were not collected during the UST closure activities.

E. Describe investigation results, including:

1. Tank Removal Analytical Results

Constituents	HG-1	HG-2
High Fraction Hydrocarbons USEPA Method 3550 (mg/kg dw)	<10.0	<10.0
Low Fraction Hydrocarbons USEPA Method 5030(mg/kg dw)	<0.10	<0.10

2. Pipeline Analytical Results

N/A

3. Transfer Line Analytical Results

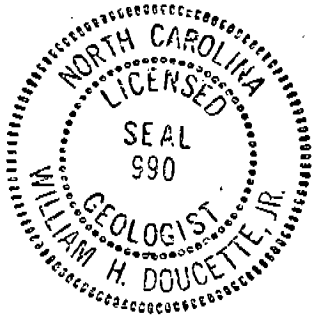
N/A

IV. Conclusions and Recommendations

Field observations and analytical results indicate that a clean closure of this UST has been achieved. No further action should be required at this site.

V. Signature and Seal of Professional Engineer or Licensed Geologist

William H. Doucette, Jr. Ph.D., L.G.
Associate/Project Manager



VI. Enclosures

-W/UST-2 Site Investigation Report For Permanent Closure or Change-in-Service of U.S.T.

FOR TANKS IN NC

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I.D. Number _____
Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

ner Name: Mrs. Helen Carroll
poration, Individual, Public Agency, or Other Entity)
eet Address: 830-910 Guilford College Road
unty: Guilford
Greensboro State: NC Zip Code: 27410
ephone Number: ( ) N/A
(Area Code)

II. Location of Tank(s)

Facility Name: Helen Carroll Property
(or Company)
Facility ID # (if available):
Street Address 830-910 Guilford College Road
(or State Road)
County: Guilford City: Greensboro Zip Code: 27410
Telephone Number: ( ) N/A
(Area Code)

III. Contact Person

me: Gene Tarascio (NCDOT) Job Title: Project Environmental Engineer Tel. No.: (919) 250-4088
sure Contractor: Soil Solutions, Inc. Address: 1703 Vargrave Street, Greensboro, NC Tel. No.: (336) 725-5844
ary Consultant: ARCADIS Geraghty & Miller Address: 2301 Rexwoods Dr., Suite 200, Raleigh, NC Tel. No.: (919) 782-5511
Chemical & Environmental Technologies Address: 102-A Woodwinds Industrial Ct, Cary NC Tel. No.: (919) 735-7353

IV. U.S.T. Information

ok #	Size in Gallons	Tank Dimensions	Last Contents
	550	3.75ft x 6ft	#2 fuel oil

V. Excavation Condition

Water in Excavation		Free Product		Notable Odor or Visible Soil Contamination	
Yes	No	Yes	No	Yes	No
	X		X		X

VI. Additional Information Required

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan.1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- [ ] Contact local fire marshal.
- [ ] Notify DEM Regional Office before abandonment.
- [ ] Drain & flush piping into tank.
- [ ] Remove all product and residuals from tank.
- [ ] Excavate down to tank.
- [ ] Clean and inspect tank.
- [ ] Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- [ ] Cap or plug all lines except the vent and fill lines.
- [ ] Purge tank of all product & flammable vapors.
- [ ] Cut one or more large holes in the tanks.
- [ ] Backfill the area.

Date Tank(s) Permanently closed: _____
Date of Change-in-Service: _____

ABANDONMENT IN PLACE

- [ ] Fill tank until material overflows tank opening.
- [ ] Plug or cap all openings.
- [ ] Disconnect and cap or remove vent line.
- [ ] Solid inert material used - specify: _____

REMOVAL

- [ ] Create vent hole.
- [x] Label tank.
- [x] Dispose of tank in approved manner.

Final tank destination: Safeway Tank Disposal Inc
9501 HWY 421, Colfax, NC

VIII. Certification (Read and Sign)

rtify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached cuments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the mitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
Gene Tarascio, Project Environmental Engineer		8/1/99

GW/UST-12 UNDERGROUND STORAGE TANK CLOSURE REPORT

Underground Storage Tank Closure Assessment Report for 830-910 Guilford College Road, Greensboro, North Carolina, 27410

I. General Information

A. Ownership of UST(s)

1. ***Name of UST Owner:***
   Formerly, Mrs. Helen Carroll

2. ***Owner Address and Telephone Number:***
   830-910 Guilford College Road, Greensboro, North Carolina, 27410

B. Operator of UST(s)

1. ***Name of UST operator:***
   N/A

2. ***Operator address and telephone number:***
   N/A

C. Facility Information

1. ***Facility name:*** 830-910 Guilford College Road, Greensboro, North Carolina, 27410
2. ***Facility ID #:*** N/A
3. ***Facility address, telephone number, and county:***
   830-910 Guilford College Road, Greensboro, North Carolina, 27410

D. Contacts

1. ***Name, address, telephone number, and job title of primary contact person:***
   Eugene Tarascio, Project Environmental Geologist
   North Carolina Department of Transportation
   P.O. Box 25201, Raleigh, NC 27611-5201
   (919) 250-4088

2. ***Name, address, and telephone number of closure contractor:***
   Soil Solutions, Inc.
   1703 Vargrave Street,
   Winston Salem, NC 27107
   (336) 725-5844

3. ***Name, address, and telephone number of primary consultant:***
ARCADIS Geraghty & Miller, Inc.
2301 Rexwoods Drive, Suite 200
Raleigh, North Carolina 27607
(919) 782-5511

4. ***Name, address, telephone number, and State certification number of laboratory:***

Chemical and Environmental Technologies, Inc.
102-A woodwinds Industrial Court
Cary, NC 27511 (919) 735-7353
State Certification Number: DWQ - 96; Public Water Supply - 37724

5. ***Name, address, and telephone number of Soil Disposal Contractor:***
Soil Solutions, Inc.
1703 Vargrave Street,
Winston-Salem, NC 27107
(336) 725-5844

E. UST Information

Tank No.	Installation dates	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	Unknown	550	3.75 ft. x 6 ft.	#2 Fuel Oil	Unknown

F. Site Characteristics

1. ***Describe any past releases at this site.***

It is unknown if any previous releases have occurred at the subject site.

2. ***Is the facility active or inactive at this time? If the facility is inactive, note the last time the USTs were in operation.***

The tanks were inactive at the time of removal. The last time the UST was operational is unknown.

3. ***Describe surrounding property use (for example, residential, commercial, farming, etc.).***

Residential/Farmland

4. ***Describe site geology/ hydrogeology.***

   Soil underlying this site consists predominantly of variably silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand. Bedrock was not encountered during excavation activities, but is reportedly comprised of metamorphosed granitic rock.

5. ***Describe results of receptor survey (water wells, basements, etc., within 1500 feet of the facility).***
   N/A

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained, and the steps taken to clean and purge the tanks.

The tank is non-regulated so permits were not required to be obtained. On January 5, 1999, a vacuum truck and dry ice were used to purge the tank of liquid product and vapors. Then, Soil Solutions, Inc. of Winston-Salem, North Carolina, inspected the UST to determined if the tank was safe for excavation and removal. Vapor concentrations within the UST were monitored by SSI by placing a Combustible Gas Indicator (CGI) probe in the fill opening. Readings of 10 percent or less of the Lower Explosive Limit (LEL) were obtained before the tank was considered to be safe for removal. The Certificate of Disposal for the tank is provided in Appendix C.

B. Note the amount of residual material pumped from the tank(s).
Approximately 1100 liters.

C. Describe the storage, sampling, and disposal of the residual material.
Fuel and fuel/water mixtures were transported off-site and disposed of by Soil Solutions at HOH Corporation, 1701 Vargrave Street, Winston Salem, North Carolina. Copies of the non-hazardous waste manifests are presented in the Appendix D.

D. Excavation

1. ***Describe excavation procedures noting the condition of the soil encountered and the dimensions of the excavation in relation to the tanks, piping, and/or pumps.***

   On January 5, 1999, Soil Solutions began excavating soils from above and around the UST. ARCADIS Geraghty & Miller personnel field screened the soil for volatile compounds using a MiniRAE organic vapor meter, which operates by photoionization detection (PID). Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's headspace

to equilibrate with the volatile organic compounds (VOCs) in the soil. The PID probe was then inserted into the bag's headspace and the resultant PID reading was recorded.

The dimensions of the excavation pit necessary to remove the UST was approximately 6 feet in width by 19 feet in length.

2. ***Note the depth of tank burial(s) (from land surface to top of tank).***
The top of the UST was located 3 feet below land surface. The bottom of the tank was located at approximately 5 feet below lands surface. The tanks were resting on and surrounded by soil.

3. ***Note volume of soil excavated.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil (approximately 9 cubic meters) was covered with a polyethylene liner and contained on all sides with bails of straw.

4. ***Describe soil type(s) encountered.***
The soil encountered at the site was generally silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand.

5. ***Describe type and source of backfill used.***
At the request of the NCDOT the excavation pit was secured with barricade fencing and not backfilled.

6. ***Describe condition of UST system(s) (i.e., pitting, holes, etc.).***
The physical condition of the tank was good. No pitting or holes were observed.

7. ***Note if the excavation reached the groundwater table or bedrock surface.***

Neither groundwater nor bedrock were encountered in the excavation pit.

E. Contaminated Soil

1. ***Describe how it was determined to what extent to excavate the soil.***

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening soil samples with an OVM. Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's headspace to equilibrate with the VOCs in the soil. The OVM probe was then inserted into the bag's headspace and the resultant OVM reading was recorded. Visual observations and screening by OVM indicated that no impacted soil was present in the bottom or side walls of the tank pits, after the tank was removed.

2. ***Describe method of temporary storage, sampling, and treatment/disposal of soil.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil (approximately 9 cubic meters) was covered with a polyethylene liner and contained on all

sides with bails of straw. One hand-augered soil boring was advanced within the stockpile. Three discrete sub-samples (SP-3A, SP-3B, SP-3C) were collected from three depths at each of the boring locations. Stockpile sub-samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E.

The stockpile soil sub-samples were composited at C&ET into three composite samples and analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. Analytical results indicated that high and low fraction hydrocarbons were not detected in concentrations which exceed reportable limits of 10mg/kg and 0.10 mg/kg, respectively. A copy of the laboratory analytical results is provided in Appendix F. The excavated soil remains at the site and will likely be used back fill the excavation pit when road construction begins.

III. Site Investigation

A. Provide information on field screening and physical observations, as well as methods used to calibrate field screening instrument(s).

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening periodic soil samples with an OVM. OVM screening procedures were discussed in previous sections. The OVM was calibrated on at least a daily basis using a zero gas and a 100 part per million by volume (ppmv) isobutylene calibration gas.

B. Describe soil sampling points and sampling procedures used.

1. *Samples Associated with Underground Storage Tanks.*

A total of two grab samples were collected for laboratory analysis from the UST pit bottom directly below the UST after it was removed. Samples, labeled GC-1 and GC-2, were collected from approximately 5 to 5.5 feet below land surface. samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E.

Soil samples were analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. Analytical results indicated that high and low fraction hydrocarbons were not detected in concentrations that exceed reportable limits of 10 mg/kg and 0.10 mg/kg, respectively. A copy of the laboratory analytical results is provided in Appendix F.

2. *Samples Associated with Pipeline and Transfer Lines.*

No samples were taken because no pipelines or transfer lines were present.

C. Describe groundwater or surface water sampling procedures

Groundwater or surface water samples were not collected during this investigation

D. Describe quality control measures

Stainless steel spoons were used to collect the soil samples directly from the backhoe bucket. Fresh latex gloves were worn while the soil was transferred from the sampling devices to the laboratory-supplied containers. Sampling equipment was decontaminated between each location with a clean water rinse, soapy water wash, followed by a clean water rinse.

The sample containers were labeled, placed in ice-filled coolers, and then remained in the custody of an ARCADIS Geraghty & Miller representative until delivery to C&ET in Cary, North Carolina.

Quality control samples were not collected during the UST closure activities.

E. Describe investigation results, including:

1. Tank Removal Analytical Results

Constituents	GC-1	GC-2
High Fraction Hydrocarbons USEPA Method 3550 (mg/kg dw)	<10.0	<10.0
Low Fraction Hydrocarbons USEPA Method 5030(mg/kg dw)	<0.10	<0.10

2. Pipeline Analytical Results

N/A

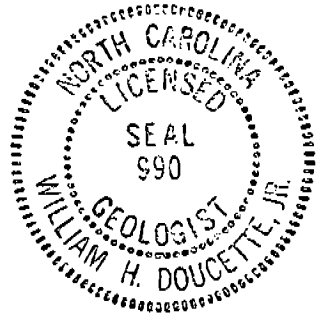
3. Transfer Line Analytical Results

N/A

IV. Conclusions and Recommendations

Field observations and analytical results indicate that a clean closure of this UST has been achieved. No further action should be required at this site.

V. Signature and Seal of Professional Engineer or Licensed Geologist



William H Doucette

William H. Doucette, Jr. Ph.D., L.G.
Associate/Project Manager

VI. Enclosures

GW/UST-2 **Site Investigation Report For Permanent Closure or Change-in-Service of U.S.T.**

FOR TANKS IN **NC**

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I.D. Number _____
Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: Jack Sillmon Heirs
Corporation, Individual, Public Agency, or Other Entity)
Street Address: 4812 West Wendover Avenue
County: Guilford
City: Greensboro State: NC Zip Code: 27410
Telephone Number: ( ) N/A
(Area Code)

II. Location of Tank(s)

Facility Name: Jack Sillmon Heirs Property
(or Company)
Facility ID # (if available): N/A
Street Address 4812 West Wendover Avenue
(or State Road)
County: Guilford City: Greensboro Zip Code: 27410
Telephone Number: ( ) N/A
(Area Code)

III. Contact Person

Name: Gene Tarnsaie (NCDOT) Job Title: Project Environmental Engineer Tel. No.: (919) 250-4088
Closure Contractor: Soil Solutions, Inc. Address: 1703 Virginia Street, Greensboro, NC Tel. No.: (336) 725-5844
Primary Consultant: ARCADIS Geraghty & Miller Address: 2301 Rexwoods Dr. Suite 200, Raleigh NC Tel. No.: (919) 782-5511
Lab: Chemical & Environmental Technologies Address: 102-A Woodwinds Industrial Court, Cary, NC Tel. No.: (919) 735-7353

IV. U.S.T. Information

Tank No.	Size in Gallons	Tank Dimensions	Last Contents
1	550	3.75ft x 6.00ft	#2 Fuel Oil

V. Excavation Condition

Water in Excavation		Free Product		Notable Odor or Visible Soil Contamination	
Yes	No	Yes	No	Yes	No
	X		X	X	

VI. Additional Information Required

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan.1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- [ ] Contact local fire marshal.
- [ ] Notify DEM Regional Office before abandonment.
- [ ] Drain & flush piping into tank.
- [X] Remove all product and residuals from tank.
- [X] Excavate down to tank.
- [ ] Clean and inspect tank.
- [ ] Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- [ ] Cap or plug all lines except the vent and fill lines.
- [X] Purge tank of all product & flammable vapors.
- [ ] Cut one or more large holes in the tanks.
- [ ] Backfill the area.

Date Tank(s) Permanently closed: _____
Date of Change-in-Service: _____

ABANDONMENT IN PLACE

- [ ] Fill tank until material overflows tank opening.
- [ ] Plug or cap all openings.
- [ ] Disconnect and cap or remove vent line.
- [ ] Solid inert material used - specify: _____

REMOVAL

- [ ] Create vent hole.
- [X] Label tank.
- [X] Dispose of tank in approved manner.

Final tank destination: Safeway Tank Disposal, Inc.
9501, HWY 421, Gdfax, NC

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of owner or owner's authorized representative	Signature	Date Signed
Eugene Tarnsaie, Project Environmental	[signature]	2/1/99

GW/UST-12 UNDERGROUND STORAGE TANK CLOSURE REPORT

Underground Storage Tank Closure Assessment Report for 4812 W. Wendover Road, Greensboro, North Carolina, 27410

I. General Information

A. Ownership of UST(s)

1. ***Name of UST Owner:***
   Formerly, Jack Sillmon Heirs

2. ***Owner Address and Telephone Number:***
   Formerly, 4812 W. Wendover Road, Greensboro, North Carolina, 27410
   (dwelling has recently been demolished)

B. Operator of UST(s)

1. ***Name of UST operator:***
   N/A

2. ***Operator address and telephone number:***
   N/A

C. Facility Information

1. ***Facility name:*** 4812 W. Wendover Road, Greensboro, North Carolina, 27410
2. ***Facility ID #:*** N/A
3. ***Facility address, telephone number, and county:***
   Formerly, 4812 W. Wendover Road, Greensboro, North Carolina, 27410
   (dwelling has recently been demolished)

D. Contacts

1. ***Name, address, telephone number, and job title of primary contact person:***
   Eugene Tarascio, Project Environmental Geologist
   North Carolina Department of Transportation
   P.O. Box 25201, Raleigh, NC 27611-5201
   (919) 250-4088

2. ***Name, address, and telephone number of closure contractor:***
   Soil Solutions, Inc.
   1703 Vargrave Street,
   Winston Salem, NC 27107
   (336) 725-5844

3. ***Name, address, and telephone number of primary consultant:***
ARCADIS Geraghty & Miller, Inc.
2301 Rexwoods Drive, Suite 200
Raleigh, North Carolina 27607
(919) 782-5511

4. ***Name, address, telephone number, and State certification number of laboratory:***

Chemical and Environmental Technologies, Inc.
102-A woodwinds Industrial Court
Cary, NC 27511 (919) 735-7353
State Certification Number: DWQ - 96; Public Water Supply - 37724

5. ***Name, address, and telephone number of Soil Disposal Contractor:***
Soil Solutions, Inc.
1703 Vargrave Street,
Winston-Salem, NC 27107
(336) 725-5844

E. UST Information

Tank No.	Installation dates	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	Unknown	550	3.75 ft. x 6 ft.	#2 Fuel Oil	Unknown

F. Site Characteristics

1. ***Describe any past releases at this site.***

It is unknown if any previous releases have occurred at the subject site.

2. ***Is the facility active or inactive at this time? If the facility is inactive, note the last time the USTs were in operation.***

The tanks were inactive at the time of removal. The last time the UST was operational is unknown.

3. ***Describe surrounding property use (for example, residential, commercial, farming, etc.).***

Residential/Farmland

4. ***Describe site geology/ hydrogeology.***

Soil underlying this site consists predominantly of variably silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand. Bedrock was not encountered during excavation activities, but is reportedly comprised of metamorphosed granitic rock.

5. ***Describe results of receptor survey (water wells, basements, etc., within 1500 feet of the facility).***
N/A

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained, and the steps taken to clean and purge the tanks.

The tank is non-regulated so permits were not required to be obtained. On January 5, 1999, a vacuum truck and dry ice were used to purge the tank of liquid product and vapors. Then, Soil Solutions, Inc. of Winston-Salem, North Carolina, inspected the UST to determine if the tank was safe for excavation and removal. Vapor concentrations within the UST were monitored by SSI by placing a Combustible Gas Indicator (CGI) probe in the fill opening. Readings of 10 percent or less of the Lower Explosive Limit (LEL) were obtained before the tank was considered to be safe for removal. The Certificate of Disposal for the tank is provided in Appendix C.

B. Note the amount of residual material pumped from the tank(s).
Less than 50 gallons.

C. Describe the storage, sampling, and disposal of the residual material.
Fuel and fuel/water mixtures were transported off-site and disposed of by Soil Solutions at HOH Corporation, 1701 Vargrave Street, Winston Salem, North Carolina. Copies of the non-hazardous waste manifests are presented in the Appendix D.

D. Excavation

1. ***Describe excavation procedures noting the condition of the soil encountered and the dimensions of the excavation in relation to the tanks, piping, and/or pumps.***

On January 5, 1999, Soil Solutions began excavating soils from above and around the UST. ARCADIS Geraghty & Miller personnel field screened the soil for volatile compounds using a MiniRAE organic vapor meter, which operates by photoionization detection (PID). Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's head-

space to equilibrate with the volatile organic compounds (VOCs) in the soil. The PID probe was then inserted into the bag's head-space and the resultant PID reading was recorded.

The dimensions of the excavation pit necessary to remove the UST was approximately 6 feet in width by 19 feet in length.

2. ***Note the depth of tank burial(s) (from land surface to top of tank).***
The top of the UST was located 3 feet below land surface. The bottom of the tank was located at approximately 5 feet below lands surface. The tanks were resting on and surrounded by soil.

3. ***Note volume of soil excavated.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil (approximately 3.8 cubic meters) was covered with a polyethylene liner and contained on all sides with bails of straw.

4. ***Describe soil type(s) encountered.***
The soil encountered at the site was generally silty clay ranging in color from dark reddish brown to grayish brown, with minor amounts of silty sand.

5. ***Describe type and source of backfill used.***
At the request of the NCDOT the excavation pit was secured with barricade fencing and not backfilled.

6. ***Describe condition of UST system(s) (i.e., pitting, holes, etc.).***
The top of the UST was damaged. Small dents and cracks were observed.

7. ***Note if the excavation reached the groundwater table or bedrock surface.***

Neither groundwater nor bedrock were encountered in the excavation pit.

E. Contaminated Soil

1. ***Describe how it was determined to what extent to excavate the soil.***

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening soil samples with an OVM. Samples were screened by placing a portion of the sample into a resealable bag. The bag was then closed for about 5 minutes to allow the bag's headspace to equilibrate with the VOCs in the soil. The OVM probe was then inserted into the bag's headspace and the resultant OVM reading was recorded. Visual observations and screening by OVM indicated that no impacted soil was present in the bottom or side walls of the tank pits, after the tank was removed.

2. ***Describe method of temporary storage, sampling, and treatment/disposal of soil.***
Only soil necessary to remove the tank was excavated and stockpiled on polyethylene sheeting near the excavation pit and within the NCDOT right-of-way. The stockpiled soil

(approximately 3.8 cubic meters) was covered with a polyethylene liner and contained on all sides with bails of straw. One hand-augered soil boring was advanced within the stockpile. Three discrete sub-samples (SP-1A, SP-1B, SP-1C) were collected from three depths at each of the boring locations. Stockpile sub-samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E. The stockpile soil sub-samples were composited at C&ET into three composite samples and analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively.

Analytical results indicated that low fraction hydrocarbons were not detected in concentrations which exceed reportable limits 0.10 mg/kg. However, the analytical results indicated high fraction hydrocarbons detected at a concentration of 68.5 mg/kg. A copy of the laboratory analytical results is provided in Appendix F. The excavated and stockpiled soil will be transported off-site by Soil Solutions, Inc. and is going to be treated by enhanced bioremediation at their facility.

III. Site Investigation

A. Provide information on field screening and physical observations, as well as methods used to calibrate field screening instrument(s).

ARCADIS Geraghty & Miller guided the excavation activities by visually inspecting and screening periodic soil samples with an OVM. OVM screening procedures were discussed in previous sections. The OVM was calibrated on at least a daily basis using a zero gas and a 100 part per million by volume (ppmv) isobutylene calibration gas.

B. Describe soil sampling points and sampling procedures used.

1. Samples Associated with Underground Storage Tanks.

A total of two grab samples were collected for laboratory analysis from the UST pit bottom directly below the UST after it was removed. Samples, labeled WA-1 and WA2, were collected from approximately 5 to 5.5 feet below land surface. samples were then packed into laboratory-provided sample containers, placed on ice in a cooler immediately after collection, and transported by ARCADIS Geraghty & Miller personnel directly to C&ET. A chain of custody record was provided with each cooler containing samples to maintain a record of personnel that had contact with the samples. A copy of the chain of custody is provided in Appendix E.

Soil samples were analyzed for high fraction hydrocarbons and low fraction hydrocarbons using USEPA Methods 3550 and 5030, respectively. Analytical results indicated that high and low fraction hydrocarbons were not detected in concentrations that exceed reportable limits of 10 mg/kg and 0.10 mg/kg, respectively. A copy of the laboratory analytical results is provided in Appendix F.

2. Samples Associated with Pipeline and Transfer Lines.

No samples were taken because no pipelines or transfer lines were present.

C. Describe groundwater or surface water sampling procedures

Groundwater or surface water samples were not collected during this investigation

D. Describe quality control measures

Stainless steel spoons were used to collect the soil samples directly from the backhoe bucket. Fresh latex gloves were worn while the soil was transferred from the sampling devices to the laboratory-supplied containers. Sampling equipment was decontaminated between each location with a clean water rinse, soapy water wash, followed by a clean water rinse.

The sample containers were labeled, placed in ice-filled coolers, and then remained in the custody of an ARCADIS Geraghty & Miller representative until delivery to C&ET in Cary, North Carolina.

Quality control samples were not collected during the UST closure activities.

E. Describe investigation results, including:

1. Tank Removal Analytical Results

Constituents	WA-1	WA-2
High Fraction Hydrocarbons USEPA Method 3550 (mg/kg dw)	<10.0	<10.0
Low Fraction Hydrocarbons USEPA Method 5030 (mg/kg dw)	<0.10	<0.10

2. Pipeline Analytical Results

N/A

3. Transfer Line Analytical Results

N/A

IV. Conclusions and Recommendations

Field observations and analytical results indicate that a clean closure of this UST has been achieved. No further action should be required at this site.

V. Signature and Seal of Professional Engineer or Licensed Geologist

William H. Doucette

William H. Doucette, Jr. Ph.D., L.G.
Associate/Project Manager

VI. Enclosures

APPENDIX D

ARCADIS GERAGHTY & MILLER

Underground Storage Tank Closure Assessment Report

APPENDIX D

LABORATORY ANALYTICAL DATA REPORTS

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155081 SAMPLE ID- HG-1 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1100
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	82.5	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Jimi Lutzenkirchen

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090
Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155082 SAMPLE ID- HG-2 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1100
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	83.1	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Jenni Ketzberger

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155083 SAMPLE ID- WA-1 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1200
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	83.3	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155084 SAMPLE ID- WA-2 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1200
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	83.1	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Eric Ritzenberger

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155085 SAMPLE ID- GS-1 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1325
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	72.1	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Jane Fitzenberger

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155086 SAMPLE ID- GS-2 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1325
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	72.6	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155087 SAMPLE ID- SP-1 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1430
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	77.8	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	68.5	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

HIGH FRACTION HYDROCARBON WAS IDENTIFIED AS FUEL OIL # 2.
NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Anne Ketzenberger

P.O. Box 12298 • Research Triangle Park, NC 27709
Telephone (919) 467-3090

Shipping: 102-A Woodwinds Industrial Court • Cary, NC 27511
Fax (919) 467-3515

CHEMICAL & ENVIRONMENTAL TECHNOLOGY, INC.

ENVIRONMENTAL ANALYTICAL SERVICES

FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155088 SAMPLE ID- SP-2 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1445
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	77.6	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

LABORATORY DIRECTOR Terri Lutzenberger

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FINAL REPORT OF ANALYSES

ARCADIS-GERAGHTY & MILLER /NC
2301 REXWOODS DRIVE
SUITE 200
RALEIGH, NC 27607-
Attn: ROB ELLIS

REPORT DATE: 01/19/99

NCDOT GREENSBORO #8.U492101

SAMPLE NUMBER- 155089 SAMPLE ID- SP-3 SAMPLE MATRIX- SO
DATE SAMPLED- 01/05/99 TIME SAMPLED- 1500
DATE RECEIVED- 01/05/99 SAMPLER- CALVIN WHITFIELD RECEIVED BY- THL
TIME RECEIVED- 1624 DELIVERED BY- C. WHITFIELD

Page 1 of 1 PROJECT NAME : NC DOT/GRNSBRO

ANALYSIS	METHOD	SAMPLE PREP DATE	BY	ANALYSIS DATE	BY	RESULT	UNITS	PQL
PERCENT SOLIDS	2540G			01/07/99	BWH	71.4	NA	
HIGH FRACTION HYDROCARBON/COMB	3550	01/18/99	AEK	01/18/99	JBR	< 10.0	mg/kg	10.0
LOW FRACTION HYDROCARBON/COMB	5030			01/14/99	JBR	< 0.10	mg/kg	0.10

PQL = Practical Quantitation Limit
Results followed by the letter J are estimated concentrations.
All results for soil and sludge samples are reported on a dry weight basis as required by the NC DEM Laboratory Certification Section. Wet Weight Concentration = (dry weight conc.)(percent solids)/100.

NC DENR CERTIFICATIONS: DWQ - 96; PUBLIC WATER SUPPLY - 37724

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ARCADIS GERAGHTY & MILLER

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name 30043411.0001.0002 / NCDOT

Project Location GREENSBORO, NC

Laboratory CHEMICAL & ENVIRONMENTAL TECH.

Project Manager JIM SHELLENBERGER

Sampler(s)/Affiliation CALVIN WITHERSPOON

NCDOT # 8.1492101

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: TPH 8015B/3550 8oz w/ 4°C						Remarks	Total
HG-1	S	1-5-99 / 1100		1						155081	1
HG-2		1100		1						155082	1
WA-1		1200		1						155083	1
WA-2		1200		1						155084	1
GC-1		1325		1						155085	1
GC-2		1325		1						155086	1
SP-1A		1430		1							1
SP-1B } SP-1		1430		1						155087	1
SP-1C		1430		1							1
SP-2A		1445		1							1
SP-2B } SP-2		1445		1						155088	1
SP-2C		1445		1							1
SP-3A		1500		1							1
SP-3B } SP-3		1500		1						155089	1
SP-3C		1500		1							1
										Total No. of Bottles/ Containers	15

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: JS Shellenberger	Organization: ARCADIS G&M	Date 1/5/99	Time 1620	Seal Intact?	
Received by: Jamie Fitzgerald	Organization: CET	Date 1/5/99	Time 1624	Yes No N/A	
Relinquished by: _____	Organization: _____	Date __/__/__	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date __/__/__	Time _____	Yes No N/A	

Special Instructions/Remarks: Composite SP-1A, 1B, 1C FOR SP-1; Composite SP-2A, 2B, 2C FOR SP-2; Composite SP-3A, 3B, 3C FOR SP-3.

Temperature Upon Receipt 4°C JHF

Delivery Method: ☒ In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other ___

METHOD REFERENCES

Federal Register, Vol. 59, 40 CFR Part 136.3, January 31, 1994

--Metals, Inorganics, and Organics for groundwater and wastewater

Federal Register, Vol. 56, 40 CFR Parts 141-143, January 30, 1991

--Metals, Inorganics, and Organics for drinking water

"Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater", NCDEHNR, DEM, March 1993.

--High Fraction Hydrocarbon and Low Fraction Hydrocarbon for groundwater and soil

SW-846, Third Edition, Revision I, July 1992

--Inorganics and Organics in soil or sludges. Metals in soil, sludge, or groundwater. (Metals in groundwater are digested by **Method 3030C, Standard Methods, 18th Edition)**

40 CFR Part 261, Appendix II and III

--Toxic Characteristic Leaching Procedure

Standard Methods, 18th Edition, 1992

--Total and Fecal Coliform in wastewater, streams, and lakes